

CLAIMS

1. A switching device comprising a frame (2), in which an actuator (6) adapted to rotate a main shaft of the switching device and rotatable around an axis (12) of rotation, and spring means (7) are installed, the actuator (6) having a 0 position, an I position and a first dead point between the 0 position and the I position, the I position being located by a given angle (α_6) in a first direction relative to the 0 position, the spring means (7) comprising one or more working springs (8, 10) each comprising a first end (14) supported to the frame (2), and a second end (16), the spring means being adapted to rotate the actuator (6), when the actuator (6) is between the 0 position and the I position, towards the 0 position or the I position depending on which side of said first dead point the actuator (6) is, **characterized** in that the actuator (6) also has a testing position, the testing position being located by a predetermined angle (β_6) in a second direction relative to the 0 position, said second direction being opposite relative to said first direction.

2. A switching device as claimed in claim 1, **characterized** in that the actuator (6) has a second dead point between the 0 position and the testing position, the spring means (7) being adapted to rotate the actuator (6), when the actuator (6) is between the 0 position and the testing position, towards the 0 position or the testing position depending on which side of said second dead point the actuator (6) is.

3. A switching device as claimed in claim 2, **characterized** in that the second dead point is accomplished with bending means (18) adapted to bend each working spring (8, 10) in the lateral direction.

4. A switching device as claimed in claim 3, **characterized** in that the bending means (18) comprise, for each working spring (8, 10), at least one supporting member (20) provided in the frame (2), and at least one bending member (22) provided in the actuator (6) in such a manner that said bending member (22) is adapted to direct a lateral force to the second end (16) of the working spring (8), and said supporting member (20) is adapted to direct a lateral force between the first end (14) and the second end (16) of the working spring (8), the force being opposite in direction respective to the force directed by the bending member (22).

5. A switching device as claimed in any one of the preceding claims, **characterized** in that each of said working springs (8, 10) is a coil

spring.

6. A switching device as claimed in claim 5, **characterized** in that when the actuator (6) is between the 0 position and the I position, each of said working springs (8, 10) acts as a compression spring.

7. A switching device as claimed in any one of the preceding claims, **characterized** in that the first end (14) of each working spring (8, 10) is supported rotatable to the frame (2).

8. A switching device as claimed in any one of the preceding claims, **characterized** in that the actuator (6) comprises, for each working spring (8, 10), a slot (24) adapted to receive the second end (16) of the working spring, and that the second end (16) of each working spring is at all times in the corresponding slot (24) when the actuator (6) is between its 0 position and I position.

9. A switching device as claimed in claim 8, **characterized** in that the switching device is configured such that when the actuator (6) is rotated from the 0 position towards the testing position, the second end (16) of each working spring (8, 10) is detached from the corresponding slot (24), and that when the actuator (6) is rotated from the testing position towards the 0 position, the second end (16) of each working spring (8, 10) enters the corresponding slot (24).

10. A switching device as claimed in any one of the preceding claims, **characterized** in that it comprises a control shaft (4) adapted to rotate the actuator (6) and having a 0 position, an I position and a testing position.

11. A switching device as claimed in claim 10, **characterized** in that the control shaft (4) is connected to the actuator (6) by means of connecting means, the connecting means having a free travel, the connecting means comprising a spiral spring means (28).

12. A switching device as claimed in claim 11, **characterized** in that the connecting means are adapted such that when the control shaft (4) is rotated from the 0 position in the first direction by an angle (γ) corresponding to the free travel, the spiral spring means (28) is tensioned while the actuator (6) remains substantially in position, and when the turning angle of the control shaft (4) exceeds the angle (γ) corresponding to the free travel in the first direction, the actuator (6) rotates along with the control shaft until the actuator (6) reaches the first dead point.

13. A switching device as claimed in any one of claims 10 to 12, **characterized** in that the control shaft (4) is adapted to rotate around said axis (12) of rotation.